

Abstract

The apparatus detects an out-of-step condition following the clearing of an external multi-phase fault in a protective relay. The apparatus includes a circuit which detects the
5 presence of an external multi-phase fault on the power line and a timing circuit for readying an out-of-step logic detection circuit in the protective relay if the external fault remains for a pre-selected period of time. An out-of-step condition is declared and a signal blocking operation of selected distance
10 elements in the protective relay is produced if the positive sequence impedance on the line remains inside an outer protection zone boundary in the impedance plane for a selected period of time, wherein the out-of-step blocking signal continues as long as the positive sequence impedance remains
15 inside the second boundary.